



General Assembly

Distr.
GENERAL

A/CONF.151/PC/48
12 July 1991

Original: ENGLISH

PREPARATORY COMMITTEE FOR THE UNITED NATIONS
CONFERENCE ON ENVIRONMENT AND DEVELOPMENT
Third session
Geneva, 12 August-4 September 1991
Plenary session
Item 2 B of the provisional agenda

Preparations for the United Nations Conference on Environment and
Development on the basis of General Assembly resolution 44/228
and taking into account other relevant General Assembly resolution:

Recent actions of intergovernmental and other bodies
of relevance to the preparatory process

Environment and International Trade

Report of the Secretary-General of UNCTAD submitted
to the Secretary-General of the Conference pursuant
to General Assembly resolution 45/210

The General Assembly in its resolution 45/210 requested the Secretary-General of the United Nations Conference on Trade and Development to prepare an analytical study on the relation between environmental issues and international trade to be submitted to the Preparatory Committee for the United Nations Conference on Environment and Development at its third session. The report of the Secretary-General of UNCTAD is placed below:

United Nations Conference on Trade and Development

Environment and International Trade

Report by the Secretary-General of UNCTAD

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Annex

Introduction

1. The General Assembly, in its resolution 45/210, requested the Secretary-General of the United Nations Conference on Trade and Development (UNCTAD) to prepare an analytical study of the relation between environmental issues and international trade, to be submitted to the Preparatory Committee for the United Nations Conference on Environment and Development at its third session. Apart from considering trade and environment in the light of UNCTAD's ongoing work on the subject, according to the resolution the study should also deal explicitly with monitoring non-tariff measures which have a bearing on the environment, in particular by means of UNCTAD's Trade Control Measures Information System. This report devotes a chapter to each of these two questions.

2. At the invitation of the Government of Norway, UNCTAD convened an informal seminar on International Trade and the Environment in Oslo from 28 February to 1 March 1991. A background paper for the seminar was prepared by a consultant, Jan Suurland, to serve as a basis for the discussions. Chapter I of this report draws on that paper. The conclusions of the seminar¹ as well as other aspects of UNCTAD's ongoing work are also reflected.

3. The right of both developed and developing countries to apply trade measures for protection of "human, animal or plant life or health" and "conservation of exhaustable natural resources", is recognized under the General Agreement on Tariffs and Trade (GATT). Contracting parties to GATT are allowed to take measures otherwise inconsistent with the general obligations (e.g. unconditional most-favoured-nation treatment, national treatment, prohibition of quantitative restrictions and tariff bindings) for specific purposes listed in Article XX in a very strict sense as exceptions. The Agreement on Technical Barriers to Trade (TBT) negotiated during the Tokyo Round with the objectives of ensuring that the technical regulations and standards do not act as unnecessary barriers to trade, specifically refers to the environment as an objective for technical regulations. This Agreement attempts to ensure that these standards and technical regulations are carefully restricted by obligations such as non-discrimination, the need to avoid arbitrariness, reliance on international norms and the use of the test of least trade restrictiveness, as safeguards against abuse. Under these rules, and as a result of decisions taken under GATT's dispute settlement mechanism, specific case law has been developed that offers some guidance as to how to distinguish between genuine environmental measures and protectionist measures.

4. In recent years, many trade measures have been imposed unilaterally for environmental purposes in the implementation of national standards and regulations. A major concern is that these regulations should not be allowed to add to the arsenal of devices already used to restrain or harass trade, particularly that of developing countries. This concern has been highlighted by the recent debate in the United States Congress between supporters and opponents of the fast-track extension in relation to the North American Free Trade Agreement negotiations and the draft International Pollution Deterrence Act of 1991 regarding countervailing actions; in both cases there was a tendency for environmental objectives to become intertwined or allied with protectionist interests.

5. Although some attempts have been made recently to raise in the GATT issues such as the environmental impact of trade policies, including as regards the items on the Uruguay Round agenda, so far the GATT has only been concerned with the implications for it of trade measures taken for environmental purposes as noted above.

6. UNCTAD, as an organ of the General Assembly, was established with, *inter alia*, the following objectives: to promote international trade, especially with a view to accelerating economic development; to formulate principles and policies on international trade and related problems of economic development; to review and facilitate the co-ordination of activities of other institutions within the United Nations system in the field of international trade and related problems of economic development; and to be available as a centre for harmonizing the trade and related development policies of Governments and regional economic groupings in pursuance of Article 1 of the United Nations Charter. UNCTAD would thus seem to constitute an appropriate forum in which to discuss issues such as the environmental impact of trade and development policies as well as the implications for development of trade measures taken for environmental purposes. Hence the role of UNCTAD in the area of trade, development policies and environment could be:

- (a) to identify measures taken on environmental grounds that have an adverse impact on trade, or which more generally impede the efforts of Governments to implement policies designed to achieve sustainable development;

¹ The report is entitled *Informal Encounter on International Trade and the Environment* (UNCTAD VIII/2).

- (b) to collect information on the interaction of the environment, regulations, trade and the performance of domestic economies.
- (c) to analyse criteria that could be used to determine whether trade measures are justified and necessary;
- (d) to assist developing countries in overcoming any adverse effects of these measures;
- (e) to work towards a general consensus on issues arising in the interface of environmental and trade policies which would be useful for Governments, international organizations and the private sector in adopting a common approach to such issues;
- (f) to alleviate environmental degradation by reducing poverty and improving the livelihood of the people in the developing countries, while ensuring that environmental concerns do not introduce new forms of conditionality into development finance and trade policies;
- (g) to encourage and assist developing countries to pursue sound management of their environment while recognizing their permanent sovereignty over the use and management of resources within their own territories, and the right to develop them in accordance with their needs and levels of socio-economic development;
- (h) to make policy recommendations with a view to enabling the developing countries to improve their market access for resource-based products, to increase their export earnings, to reduce over-exploitation and the associated export of natural resources and raw materials, to overcome obstacles to sustainable development, and to cope with environmental degradation.

7. The relations between environmental considerations and international trade are only beginning to be studied. They are numerous and complex; generalizations need to be carefully tested against the multifarious reality of particular cases. That is one of the conclusions of Chapter I. Another finding, also related, is that both international trade theory and its practice in the spirit of GATT as well as the growing consensus - at least among developed countries - on economic policy for the environment, recognize that it is valuable for the prosperity of the world economy as a whole to take full account of differences in environmental conditions just as they take into account differences in endowments of other factors of production.

8. With regard to UNCTAD's ongoing work, General Assembly resolution 45/210 refers specifically to the paper which the UNCTAD secretariat is to present to the Trade and Development Board in response to Board decision 384(XXXVII). That paper is concerned with the issue of sustainable development, in particular the reduction of poverty and its interface with policies and mechanisms in environmentally sensitive sectors. It will therefore cast further light on the issues discussed here.

Chapter I

Environment and North-South Trade

Introduction

9. Within the context of sustainable development, the international community will have to place greater emphasis on economic growth in harmony with the environment. While trade is a major determinant of the level and distribution of economic growth, there is increasing awareness that sustainable development involves the reconciliation of environmental and trade objectives as part of broader efforts to integrate environmental and economic policies.

10. This chapter concentrates on these policy questions. It is clear that the policies actually pursued will affect the structure and even the volume of international trade. The solution of many environmental problems may involve further reductions in the material content of goods or substitution of inputs which are particularly damaging to the environment by others which are more benign. The composition of international trade will be influenced by environmental policies, the demand for some goods rising as a result of declining interest in others. International trade in chlorofluorocarbons (CFCs) or asbestos, for instance, can be expected to fall, while new prospects may open up for environment-friendly products, such as certain vegetable fibres. A study of some aspects of this question is underway within the UNCTAD secretariat. Geographical patterns of trade will also be affected as a result not only of shifts in demand from some goods to others, but also of changing transport costs in response to environmental policies.

11. This chapter focuses on policies insofar as they affect trade in goods. There is no doubt that trade in services may also have environmental effects, just as environmental concerns have an impact on trade in services. Tourism has a significant effect on the environment and is in turn influenced by it. Environmental issues are undoubtedly going to affect the development of this sector which is essential to the economies of several developing countries. Transport is an input into virtually every sector of the economy. Energy policies inspired by the concern for sustainable development will certainly affect this key sector.² These relationships, which may be of great importance to developing countries growth, are only beginning to be systematically studied. The specific analysis they deserve goes beyond the scope of this report.

12. Transboundary movements of toxic waste will not be covered here. Movements of such material between developed and developing countries are the subject of the Basel Convention on the Control of Transboundary Movements and Hazardous Wastes and their Disposal, adopted in 1989, and the Bamako Convention on the ban of the import into Africa and the control of transboundary movement of hazardous wastes within Africa, adopted in January 1991, which is intended to be even more stringent. However, the Basel Convention has been ratified by only 10 States while a minimum of 20 is needed for it to take effect. The danger of exports of toxic wastes from developed to developing countries, whether legal or not, remains real.

13. World trade is strongly dominated by the industrialized countries, in particular the developed market economies (DMEC) belonging to the Organization for Economic Cooperation and Development (OECD). The share of DMEC countries in total world trade (recorded imports plus exports of goods) amounted to US\$ 4,250 billion in 1989 of a world total value of US\$ 6,000 billion. Therefore, it is clear that the task of adjusting economic growth and international trade to global sustainable development lies very much with the developed world. However, this certainly does not diminish the significance of trade-related environmental issues for the developing world, nor does it imply that the establishment of sustainable environmental conditions is a matter of less concern to developing countries. On the contrary, many developing countries are already confronted with major public health problems owing to inadequate pollution control as well as an ongoing degradation of their natural resource base that is undermining their capabilities to ensure food security and to maintain their income-earning capacity. As has been amply demonstrated by the World Commission on Environment and Development, unless and until developing countries succeed in improving current domestic practices of environmental and natural resource management, their economies will be increasingly vulnerable to environmental hazards.³

14. The achievement of environmentally sound development patterns within developing countries, as in the developed ones, is to a large extent dependent on the establishment of an appropriate incentive structure aimed at the effective integration of environmental and sectoral policies and the internalization of environmental costs into product prices. The ability of developing countries to integrate policies and internalize such costs will be strongly influenced by the conditions under which they are able to market their exports. Insofar as they are price takers, environmental costs can only be covered to the extent that buyers are willing to accept these costs. Furthermore, the marked decline of commodity prices during the 1980s and more generally the worsening of the developing countries' terms of trade have reduced what little scope they may earlier have had for meeting environmental costs out of export revenue (see table I). The relations

² Some of these transport issues will be discussed in the paper which the UNCTAD secretariat is to present to a future session of the Trade and Development Board, in response to Board decision 384(XXXVII), para. 5.

³ World Commission on Environment and Development, *Our Common Future*, Oxford 1987.

between export earnings and the environment in both exporting and importing countries is complex and depends on the particular commodities and countries concerned. These questions call for further study. In any event, it is clear that the appropriate integration of environmental concerns into North-South trade relations is a major prerequisite to environmentally sound economic development.

15. This chapter is organized as follows. Section A sketches the major interaction between trade and environmental conditions in developing countries. Section B deals with new developments in environmental policies, particularly in the developed market economies, and their possible impacts on product trade. Section C discusses the question of whether different levels of environmental stress and environmental control may induce shifts in production from North to South. It also addresses the issue of access by developing countries to environmentally sound technologies. The final section discusses the influence of trade liberalization on natural-resource management in developing countries and the possible use of trade instruments for environmental purposes.

A. Environmental aspects of Third World trade

16. The interactions between trade and the environment are manifold and complex, and they vary greatly among countries. Differences in the overall level of economic development, the economic structure, the size of the domestic market, the dependence on primary production and foreign exchange all have different implications for the domestic environments in developing countries. Also, there are large differences among countries and regions in the Third World with regard to climatic conditions, the stock and quality of renewable and non-renewable resources, population densities and the existing levels of pollution and natural resource exploitation. Therefore, it is clear that any broad assessment of the interaction between trade and environment in the Third World has quite different implications for individual countries. However, it is beyond the limits of this paper to discuss variations among countries in any detail. Therefore, the treatment will consist of a broad assessment that can be interpreted as being indicative for trade and environment concerns shared by those developing countries which rely heavily on the production and export of primary commodities and which belong to the lower and middle income categories.

17. This paper discusses the relations between sustainable development and trade policies. The extent to which it touches on sectoral issues is incidental to its main focus.⁴ The following paragraphs nonetheless sketch some of the more important relations between commodity exports, trade policy and sustainable development, not only because of the importance of these exports to developing countries, but also as an illustration of the types of problem which trade policy needs to address.

18. Many developing countries are still highly dependent on the export of primary commodities other than petroleum as a source of foreign revenue. In 1987, dependence on these exports was on average 35 per cent of recorded visible export earnings in Africa and 46 per cent in Latin America. In the Least Developed Countries it was 70 per cent or more. This dependence makes developing countries very vulnerable to structural and short-term fluctuations in commodity markets. Over the last two decades real world market commodity prices have declined by about 45 per cent for food, 25 per cent for agricultural raw materials and 40 per cent for minerals, ores and metals. This downward path grew considerably steeper in the 1980s (see table 1).

⁴ A fuller sectoral analysis will be contained in the paper which the UNCTAD secretariat is to present to a future session of the Trade and Development Board in response to Board decision 384 (XXXVII) para. 5.

Table 1
*Average annual rate of percentage change in market prices of
primary commodities, in constant 1980 dollars ^a*

Commodity	1970-90	1970-82	1982-90
Total food	-3.9	-1.5	-5.1
Food	-4.2	-2.3	-2.7
Tropical beverages	-2.1	2.3	-11.1
Vegetable oilseeds and oils	-5.0	-3.3	-9.9
Agricultural raw materials	-1.5	-0.4	-2.5
Minerals, ores and metals	-2.4	-3.2	0.0

Source: Table A.2 of UNCTAD Commodity Yearbook, 1990.

^a Constant dollars defined as current dollars divided by the export unit value of manufactured goods exported by developed market-economy countries.

19. The combined effects of low commodity prices, increasing import prices and high debt service ratios may force developing countries to expand their commodity production even more, just to avoid a collapse of their economies. This phenomenon of increased supply in response to lower export price has considerably aggravated the poverty-resource degradation cycle in which quite a number of resource-dependent developing countries are trapped.

20. Meanwhile, low export prices for resources encourages resource consumption in importing countries, thereby hastening the depletion of non-renewable resources. If the production technology of the developed countries emphasizes the heavy use of some natural resources such as wood or minerals of which they do not have an abundant supply, or which they have decided to conserve, then the pressure on the countries which do possess those resources could become more intense. As the resource base on which the exporting countries depend for their development shrinks, they become exposed to conditionalities of various kinds which developed countries may try to impose.⁵

21. In many developing countries, the agricultural sector suffers from an inappropriate incentive structure under which both the export crop and the domestic food supply sectors operate. The agricultural sector may be heavily taxed or otherwise controlled to generate revenue for expansion of other sectors or to keep down the urban cost of living. These problems are worsened by agricultural protectionism in developed countries and their subsidization of food exports that compete with certain developing country commodities such as rice, sugar, soya beans and maize. In short, policy failures in both developing and developed countries have deprived the agricultural sector in developing countries of the income it needs to meet the full social costs of its activities.

22. Uncontrolled logging is an important cause of natural resource degradation in a number of developing countries. Growing awareness of the need to enhance economic efficiency as well as the ecologically sound management of tropical timber stocks has led to the establishment of the International Tropical Timber Agreement (1983). This is a pioneer instrument among commodity agreements in recognizing explicitly the need for ecologically sustainable resource management.

23. Importation by developed countries of minerals from developing countries, measured as the share in total consumption, has been increasing. Between 1985 and 1987 almost 80 per cent of total world exports of tin ore and metal, almost 60 per cent of world exports of copper ore and

⁵ ECLAC, *Sustainable development: changing production patterns, social equity and the environment*, LC/G.1648(CONF.80/2) 1991.

metal and more than 40 per cent of world exports of iron originated in developing countries. Export incomes from minerals and metals from many developing countries have stagnated, impairing their financial capabilities to mitigate adverse environmental impacts. Although the environmental effects of mining and primary processing of minerals are much more localized than is the case for timber and agricultural commodities, they are also much more devastating. Metal compounds from tailings leaking into surface or ground water can cause serious problems. Processing metals and minerals may result in releases of dust, gases and liquid residues; processing itself also often requires large amounts of energy.

24. The Lomé Convention between the European Community and the African, Caribbean and Pacific (ACP) countries provides for financial mechanisms with regard to agricultural and mineral commodities to compensate developing countries for significant reductions in their export earnings. They are more than price stabilizing mechanisms. Under Lomé IV, sustainable resource management has been recognized as one of the central objectives of member countries. The Convention establishes no operational linkage between preferential treatment and the environmental performance of recipient countries.

25. Recently, developing countries began to question the free access of industries in the developed world to their gene reservoirs. This has been triggered by the increase in the privatization of research and development activities in bio-technology which could accelerate the pace of demands for intellectual property protection of modifications and applications of wild plants to the benefit of food and pharmaceutical industries in the industrialized world, without any economic rents accruing to the developing countries.

26. A major side effect of the expansion of primary production is the loss of wildlife habitats. Wildlife habitats account for more than 99 per cent of the gene pools of the world, the bulk being located in tropical countries.

27. Trade in a number of wildlife products is regulated in the Convention on International Trade in Endangered Species (CITES), to which 110 countries are parties. Total export value of wildlife products (excluding timber and fish) is estimated at US\$ 4 billion, including illegal trade. There has been considerable debate about whether economic incentives or legal restrictions are more effective in conserving particular types of endangered species. Opinion remains divided. The issue is likely to be the subject of debate at the eighth meeting of the Conference of the Parties to the Convention, in March 1992. The subject deserves further study.

B. Future developments in environmental policies and possible impacts on products

28. It is generally recognized that environmental degradation worldwide has its origin in a set of interrelated factors:

- (a) Gross inequality of income and of access to resources, both between and within countries;
- (b) Deficiencies in the information basis needed to make a proper assessment of the carrying capacities of ecosystems;
- (c) Deficiencies in market mechanisms owing to trade distortions and problems such as those inherent in reflecting externalities in prices and the joint use of environmental resources for commercial and non-commercial purposes.⁶
- (d) Deficiencies in policy interventions owing to a preoccupation with narrow sectoral interests and a focus on short-term growth objectives.

29. Many countries, including developing ones, are devising ways of enhancing the integration of environmental concerns into decisions made in the public and private sectors of the economy,

⁶ For a more comprehensive listing of problems which sustainable development raises for economics, see *Sustainable Development and UNCTAD Activities*. Report by the UNCTAD secretariat (TD/B/1267, 7 August 1990), paras. 19-29.

including trade. General features of new policy approaches are:

- (a) More emphasis on the prevention of environmental hazards by a more extensive use of risk assessment techniques. The general tendency is to tighten acceptable risk margins in accordance with the *precautionary principle*;⁷
- (b) More comprehensive environmental planning aiming at more effective control of the transfer of pollutants through different environmental media - air, water, soil - (*cross-media pollution control*) and of exposure to hazardous substances in different stages of product cycles (*cradle-to-grave control*);
- (c) The establishment of appropriate mechanisms to assess and review the environmental impacts of sectoral policies (agriculture, industry, transport, energy) and to enhance the use of sectoral policy instruments (permits, subsidies, taxes, technology development and so on) for environmental purposes;⁸
- (d) A more extensive use of economic incentives to encourage the development and application of clean and resource-efficient technologies and to ensure a more realistic pricing of the use of environmental resources by a more rigorous application of the *Polluter-Pays Principle (PPP)*.
- (e) More broadly, applying the *User-Pays Principle (UPP)* to resource use would be a major factor in reducing resource use conflict, minimizing environmental and social impact and improving resource-use efficiency. The UPP implies that all resource users should pay for the full long-run marginal social costs of the usable resource and related services.
- (f) More extensive international cooperation and coordination in tackling transboundary and global environmental problems; enhanced consensus on appropriate approaches to domestic environmental and natural-resource management problems.

30. These developments are likely to have a considerable influence on the pattern of production, consumption and trade. These effects will be triggered mainly by the industrialized countries. Some of the major trends likely to emerge have been outlined below and an attempt has been made to identify some of the more important effects on North-South trade in commodities and manufactures.

(1) *Proliferation of product regulations*

31. One of the most marked features of future environmental policies in the developed market economies will be the proliferation of environmental regulations in product markets. Most developed countries are confronted with a continuing accumulation of toxic materials in the environment owing to the diffuse use and disposal of chemical products, durables and packaging materials. The trend will be to enforce or to encourage the use of more environmentally sound products. This will be done by a variety of instruments, such as registration and certification of chemical products, user restrictions and bans, product quality standards, labelling, and economic mechanisms such as taxing "dirty" products or encouraging deposit-refund systems.

32. It may be assumed that across-the-board access to hazardous and resource-inefficient products will become increasingly difficult in developed market economies. Less clear is the extent to which developed countries will follow a co-ordinated approach. From the trade point of view, uniform product standards and similar forms of product regulation are more convenient. However, from an environmental point of view, there is a preference to adjust product standards to the specific environmental conditions in each country. This calls for a certain differentiation of product standards to enable countries which are exposed to high levels of environmental stress to impose

⁷ "In order to achieve sustainable development, policies must be based on the precautionary principle.... Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation", *Bergen Ministerial Declaration on Sustainable Development in the ECE Region*, 16 May 1990, para. 7.

⁸ These questions will be analysed in the paper which the UNCTAD secretariat is to present to a future session of the Trade and Development Board in response to Board decision 384 (XXXVII), para. 5.

more stringent standards.

33. The diversity of situations calls for a diversity of policy instruments which have to be adapted to national, regional or local environmental conditions in order to ensure an efficient achievement of quality objectives. International harmonization of environmental policy instruments is, however, required to prevent the introduction of deliberate or unintentional trade distortions. "Harmonization" is a generic term encompassing several forms of concerted action such as (a) uniformity of policies; (b) agreement on common policy instruments while leaving each country free to adopt the form of its implementation; or (c) agreement on common principles (e.g. PPP).⁹

(2) Impacts on product technology

34. The drive to environmentally sound products is likely to trigger off wide-ranging innovation.

- Much of this innovation will focus on reducing the use of hazardous substances or replacing them by less harmful substances. This will particularly affect the use of asbestos, heavy metals, hydrocarbons and chlorinated hydrocarbons in all sorts of products.

- Industrial boilers, engines, electric motors and pneumatic equipment, for instance, will have to meet increasingly tighter energy efficiency standards as will such consumer durables as furnaces, air conditioners, refrigerators and other electric-powered articles. Similar developments will take place in respect of water-consuming appliances.

- The use of non-degradable chemical materials will be discouraged. This may put a premium on the use of organic materials where they can offer a substitute as, for instance, in packaging materials. In many cases, the substitution will be one from a non-degradable compound into one that decomposes more easily or which can be re-used.

- To facilitate the recovery and recycling of minerals and metals, it is likely that the construction of industrial equipment and durables will have to meet special design and construction standards.

- Food products will have to meet increasingly tighter standards with regard to pesticide residues, additives and preservation techniques.

35. Achieving the environmental standards which are now desired depends to a great extent on the development and use of environmentally sound technologies in all countries. These technologies play a key role in reconciling the need for sustained growth and the concern for the environment, including global environmental problems. The need to improve the access of developing countries to these technologies must be underlined.

36. In many sectors, environmentally sound technologies are simultaneously capital-, science- and management-intensive. This situation may render access difficult for certain countries and populations. It follows that other suitable technologies also need to be developed and used, locally or internationally. In any case, the transfer of obsolete technologies to developing countries should be avoided.

37. Companies constitute an important source of pollution, but at the same time they are especially well-placed to promote the technologies needed to combat environmental problems. The commitment of enterprises should be sought with a view to develop environmentally sound technologies and to ensure their accessibility for developing countries. A large percentage of international technology transfer takes place within firms, which constitutes an obstacle to open trade in technology. This problem is particularly acute in the case of environment-related technologies: as most of them are new, they are often "locked up" in enterprises, while older, less environmentally sound, technologies are more easily and freely available.

⁹ See *guidelines for the application of economic instruments in environmental policy*, background paper 1 of the OECD Environment Committee Meeting at ministerial level, 30-31 January 1991, pp. 70-71.

38. The international dialogue on the transfer of technology, which has been pursued for many years in UNCTAD, could be revived around environmental concerns. A major component of this dialogue would be to determine a good balance between the protection of technological innovation and the larger diffusion of basic, environmentally sound technologies. In any event, the need should be underlined for financial and technical assistance to developing countries to help them gain access to such technologies and to enlarge the corresponding skill and knowledge base required at the national and local levels.

(3) Possible impacts on exports from developing countries

39. The possible impact of more stringent product regulations on the export position of developing countries will be quite different for various types of products and market segments. Specific product-targeted assessments can only be made on the basis of an in-depth analysis of technology opportunities and their costs. Even so large degrees of uncertainty will remain. With these caveats in mind an attempt can be made to outline some of the impacts.

40. A simple classification of types of impact may help in understanding the sectoral analysis which follows. Environmental measures influencing international trade may affect (a) finished products, through environmentally harmful residues contained in them, (b) production processes, especially if they affect the global environment - e.g. through gas emissions producing a greenhouse effect as a consequence of energy use or (c) unsustainable exploitation of natural resources. Environmental concern in developed countries is influencing the evolution of technology; developing countries largely depend on technologies obtained from developed countries, embodied for instance in capital goods. The technologies available are changing as a result of environmental concerns in the northern hemisphere. Lastly, consumers make their decisions to some extent in the light of what they consider to be proper behaviour beyond immediate economic criteria of choice. The boycott of certain baby food manufacturers confirms that such behaviour can be influential.

41. Though agricultural raw materials, in general, are unlikely to become the object of product regulations themselves, it is possible that restrictions will be imposed on imports from countries that do not meet certain standards of sustainable resource management. It is also possible that some shift in production to developing countries will take place owing to increasing resource constraints in the developed countries. Opportunities for increased exports may also come because of some replacement of chemical-based products by organic fibres (packaging materials, furniture, construction components, textiles) but they are likely to be modest. Limitations on the use of chemical inputs in agriculture may also provide export opportunities for developing countries in terms of alternative inputs based on natural products such as pyrethrum. Export opportunities may also come as a result of reducing the production of some agricultural products in the developed countries.

42. In the case of minerals and metals, the current trend is declining inputs per unit of output in the industrialized countries. This trend is likely to be strengthened by further improvements in refining and recycling. The negative impact which this may have on the export position of developing countries may be offset somewhat by continued strong growth in minerals and metals demand in developing countries as well as by further shifts in primary production processes owing to natural resource supply constraints and tighter environmental controls in industrialized countries. This, in combination with higher energy and transport costs, may also facilitate further processing in countries of origin.

43. The export of food products from developing countries is likely to be affected by tighter standards regarding pesticide residues and the use of chemical additives in food processing and preservation. Technologies compatible with these standards are not significantly more costly than the present ones. What is needed is to ensure that developing countries have adequate access to new pesticides and techniques of integrated pest control. Technical adjustments in the food processing industries to meet product standards may however be more complicated and costly. In both cases, it is likely that more stringent product control requirements in the developed countries will also have a positive impact on the protection of domestic environments in the developing countries. Financial problems associated with improvements in environmental technology of food production and food processing can be alleviated substantially by a reduction of trade barriers in the developed market economies.

44. An important segment of the export market of developing countries consists of natural resource-based products such as textiles, leather, metal and wooden products. These manufactures are produced by relatively pollution-intensive processing techniques (e.g. traditional tanning, dyeing, electroplating, wood preserving). The export of such manufactures may be affected because of further restrictions on the chemical compounds and heavy metals contained in them. To some extent, more stringent product requirements can probably be met by a simple substitution of inputs; in other cases, significant alterations in processing techniques may be required. However, substantial changes in processing techniques are also required to reduce the often excessive discharge of pollutants in the domestic environment. Therefore, this is another case where stringent product requirements may have a spin-off on environmental protection in developing countries.

45. Much of the proliferation of environmental product regulations in the industrialized countries will focus on the use of basic chemicals, chemical specialties, motor vehicle engines, industrial and power equipment and consumer durables. The technology needed for the production of "clean" and "energy-efficient" alternatives will, in many cases, require a substantial further increase of already high inputs of financial and human capital characteristic of these types of industries. This may prove to be a further setback in terms of export opportunities for developing countries. However, a possible spin-off from this trend could be the expansion of the production of less environmentally advanced industrial equipment and durables in developing countries.

46. To illustrate this point it must be noted that the development and marketing of resource-efficient equipment and durables in the developed world will be enforced either by direct regulation or by raising the costs of resource use either through direct pricing, taxes or charges. In both cases, the effect is that the break-even point - where cost increases match the cost savings resulting from lower resource consumption - is raised. It may be argued that in developing countries where the use of energy, chemicals and other hazardous materials is much lower, adequate environmental protection can be achieved with less stringent requirements regarding the resource efficiency of industrial equipment and durables. This implies that the break-even point between prices and resource savings will generally be lower than in the industrialized countries. This differential already exists and may be expected to increase, particularly when the industrialized countries take the lead in reducing certain gaseous emissions. Therefore, it is quite conceivable that for certain products a kind of dual world market will emerge: one of relatively expensive, high-tech, high-quality, more environmentally advanced products in the developed world and another market of relatively cheap products, less sophisticated or with a greater impact on the environment but adapted to the specific economic and environmental conditions in the developing world.

47. Differences of this kind in products destined for different markets, or environmental standards related to different geographical conditions, can serve sustainable development. It also opens up new prospects for economic co-operation among developing countries. Not only trade policy and trade promotion, but also technology policy should be oriented to encourage this kind of specialization and cooperation.

48. This observation should not be interpreted as minimizing the need for more resource-efficient products in developing countries but more as an argument for the development of product technologies that are cost-efficient in the context of those countries. The argument for appropriate standards and technologies applies *a fortiori* to the environmental control of production processes, a subject which will be covered in the next section.

C. Impacts on the location and technology of production

49. Areas with high levels of stress on the environment owing to a high density of polluting and resource-intensive activities, will need to have more stringent emission source control measures than ones where overall levels of environmentally-damaging activities are lower in relation to the assimilative capacity of the environment and their stock of natural resources. Though there are many areas subject to severe environmental degradation in developing countries, it can be maintained that places can be found where adequate environmental protection can be achieved with less stringent control measures than required in the industrialized countries, at least for the next 10 to 20 years.

50. Comparative trade advantages might even be strengthened if environmental quality standards are going to be less demanding than those in developed countries because of differences in attitudes with regard to the trade-offs to be made between environmental quality objectives and economic growth. It should be recalled that an essential element of the Polluter-Pays Principle is that the "acceptable state" of the environment to be achieved is determined by collective choice through a political process in the area concerned.¹⁰

51. Whether, and to what extent, a shift in production will occur is difficult to assess, not only because it depends upon the relative significance of environmental control costs in total production costs - which may change over time - but also on the way developed countries and the international community at large are going to deal with possible trade effects associated with different levels of environmental control between North and South. This issue calls for astute negotiation between developing and developed countries.

(1) Relocation of industries

52. A number of empirical studies have been carried out to investigate claims of "industrial flight", industries moving away from industrialized countries to developing countries. It has been found that in spite of the stringent environmental regulations imposed on industries during the 1970s and early 1980s by most industrialized countries, there have been no measurable effects on international trade patterns. The main explanation for this is the relatively low share of environmental costs in total product costs, even for industries engaged in the production of "pollution-intensive" commodities such as non-ferrous metals, iron and steel, paper and pulp or chemicals. For instance, in the United States, estimated cost increases attributed to environmental control in those industries varied between only 1.9 and 2.9 per cent. It is not surprising, therefore, that there is no evidence of any significant "pollution haven" effect in the Third World even though average pollution control cost levels in developing countries were about 50 to 60 per cent below United States levels.

53. It may be argued that an increasing environmental awareness and a tightening of pollution control standards in the industrialized countries will be biased against a further expansion of "dirty" production processes in those countries. This may lead to a process where developing countries will be encouraged to specialize in "dirtier" upstream processing while the developed countries will focus on the production of "cleaner" downstream intermediates and final goods. There is indeed some evidence that such shifts are already taking place, for whatever reasons, particularly in the processing of metal commodities. Developing countries have succeeded in increasing substantially their share in the processing of metal ores, as shown in table 2.

54. It is to be expected that this trend will continue. However, in order to avoid serious environmental degradation, further expansion of mineral and metal processing industries must take place within the constraints which appropriate regard for the environment would impose. This implies that developing countries should be able to market their products at prices which will allow an adequate coverage of environmental control costs. The difficulties developing countries face in this respect may be illustrated by the fact that the real value of mineral exports by the main commodity exporting countries in 1987 was only 80 per cent of the value in 1980; despite a substantial increase in the volume of exports. It is not likely that this situation can be improved much by a further expansion of upstream processing because most of the added value involved in the production of mineral and metal products is realized further downstream at the less-polluting stages of processing and manufacturing. Expansion of developing countries' production in these stages is hampered by such factors as limited size of their domestic or regional markets, distance to main consuming markets and, for the more processed products, by escalating tariffs and non-tariff measures in many important consuming countries.

(2) Facilitating technology adjustment

¹⁰ "Note on the implementation of the Polluter-Pays Principle" para. 2, appended to the recommendation of the OECD council on guiding principles concerning international economic aspects of environmental policies, adopted by the Council at its 293rd meeting on 26 May 1972.

Table 2
Raw material output processed in principal developing countries as a percentage
of primary production

	1980-1982			1986-1987		
	1st Stage	2nd Stage	3rd Stage ^a	1st Stage	2nd Stage	3rd Stage
Aluminium	30	20	16	41	31	24.5
Copper	74	60	26	81	70	35
Iron	32.5	49	n.a.	37	57.5	n.a.
Tin	94	13	n.a.	103	30	n.a.
Nickel	43	14.5	n.a.	54	26	n.a.

Source: UNCTAD Commodity Yearbook 1989.

^a Primary production and processed products by individual commodity are shown in the table below:

Commodity	Primary production	1st stage of processing	2nd stage of processing	3rd stage of processing
Aluminium	Bauxite	Alumina	Aluminium refined	Refined aluminium consumption
Copper	Copper ore	Blister copper	Refined copper	Refined copper consumption
Iron	Iron ore	Pig iron	Crude steel	
Tin	Tin ore	Tin metal	Primary tin metal consumption	
Nickel	Nickel ore	Refined nickel	Refined nickel consumption	

55. The fact that developing countries may have a comparative trade advantage in terms of more abundant natural resources and lower overall pollution loads does not imply that there is not an urgent need to improve environmental practices in primary and secondary production. On the contrary, in some cases existing primary processing industries in developing countries would not survive without heavy subsidies and protection because of heavy inputs of energy and other natural resources, as well as chemical inputs. In other industries, high resource costs are masked by low labour costs. In a number of developing countries, weaknesses in resource management limit agricultural productivity, restricting the scope for a shift of agricultural production from other countries to them.

56. It may be argued that in many cases the heavy use of resources and excessive pollution-production ratios are attributed more to managerial weaknesses and inappropriate incentives than to lack of low cost technical solutions. Hence, a first requirement for any improvement in environmental performance is a more consistent application of the Polluter-Pays and User-Pays Principles in the sense that industries are forced to use the "best practicable means" of pollution control and to set more realistic prices for the supply of energy, water, land and other raw materials.

57. In order to overcome existing financial constraints within industries and to smooth the adjustment of existing industries, financial support is undoubtedly needed. Transitional measures would include a gradual phasing out of existing direct or indirect subsidies to resource supply. It is worth stressing that an environmentally sound technological adjustment can be achieved only if Governments in both developed and developing countries break away from distortive and environmentally damaging policy intervention and subsidy mechanisms. Their ability to do so and to get out of the poverty-resource-degradation trap is, however, also strongly dependent on the overall availability of resources. This can in turn be enhanced by the removal of distortive trade restrictions in the industrialized countries.

58. Where existing trade distortions and inappropriate incentive structures are already obstructing the full-scale application of currently available and feasible environmental technologies, they certainly will become a major obstacle to the development and implementation of technolo-

gies needed to achieve sustainable environmental conditions in a global context. Global warming can serve as an example. Studies carried out to assess the cost implications of the prevention (or rather the delay) of global warming arrive at cost estimates that vary between US\$30 and US\$70 per ton carbon retained, or equivalent measures such as the substitution of fossil fuels by solar, wind and biomass energy, or carbon sinks by means of large-scale re-afforestation. This estimate is based on scenarios that aim at a 10 to 20 per cent reduction of gas emissions producing the greenhouse effect by the years 2005-2010 compared to current levels. Total annual costs would rise by about 0.5-3.0 per cent of gross world product. One study estimates that a 20 per cent reduction below 1990 levels to be achieved by 2020 for the countries in the OECD, the Soviet Union and Eastern Europe in combination with a doubling of "greenhouse" gas emissions by the developing world would have a GNP cost impact of 1 to 2 per cent for OECD, 4 per cent for the USSR and Eastern Europe and 5 per cent for the rest of the world. Although these figures can be challenged, they do offer an idea of the order of magnitude involved; beyond doubt the financial resources needed to meet the objectives are enormous. For the OECD countries, it will amount to a doubling of existing levels of environmental expenditure. In the case of developing countries, this prediction would mean that in the long run environmental expenditure will have to rise to levels that are about 3 or 4 times higher than current levels of development assistance.¹¹

59. Acknowledging that in the short and medium term the pressure on financial resources will be much lower, it will nevertheless be substantial and certainly beyond the current financial capabilities of developing countries. Therefore, it is evident that any serious effort by developing countries to mitigate gaseous emissions producing the greenhouse effect must be backed by a considerable increase in financial assistance. The same conclusion can be drawn with regard to a number of other environmental issues: it is unlikely that financial transfers currently in prospect will bridge the gap between the financial capabilities of developing countries and the financial needs of meeting global environmental objectives. Therefore, it may be expected that developing countries will be able to act only if they are assured of access to additional economic resources.

60. New technologies which are less polluting or more efficient in resource or energy use may be cheaper to operate than the old technologies they replace. If developing countries are not to be disadvantaged by a twist in innovation, they need assured access to new technology on fair terms. Since the use of some forms of environmentally sound technology may actually benefit the global environment and hence that of developed countries, the latter may be inclined to facilitate their adoption in these cases. Of particular importance from the trade point of view is technical assistance in adjusting process and product technology to meet environmental product standards in industrialized countries. Further assistance is also required to explore marketing possibilities of "natural" products such as organic fibres and "pesticide free" products.

D. Trade policy for sustainable development

61. At the centre of the debate regarding trade and environment are concerns about potential conflicts between trade liberalization and the need for more effective environmental control. These concerns are related to both potential tensions between objectives of trade liberalization and environmental objectives, as well as to the question of what constitutes the proper use of trade and environmental policy instruments respectively.

62. The underlying rationale of trade policies is that, with a few exceptions, free trade serves the objective of an efficient allocation of scarce economic resources in order to enhance economic welfare and growth. Though comparative trade advantages are increasingly determined by differences in technology advancement and human skills, natural factor endowments still play a significant role. Hence, one of the central objectives of GATT is to allow countries to take advantage of differences in natural factor endowments.

63. The main condition for trade to serve sustainable development is that end-user prices reflect the real costs of measures necessary to protect and conserve environmental resources in the countries of origin as well as in the country of destination (or transit, in the case of transport) in-

¹¹ Scott Barrett, *Economic instruments for climate change policy*, unpublished paper prepared for OECD, 1990.

volved in the production, consumption and disposal of products. Given that the fundamental objective is trade based on relative prices which fully reflect marginal social costs (including externalities), trade policy must be designed in consequence. In some cases, this may result in less intervention in markets than at present (e.g. the agriculture of developed market-economy countries), but in other cases it may call for more intervention (e.g. with respect to energy in the light of global warming). Given this fundamental objective, countries with high environmental pressures may well need to impose more stringent measures on domestic production, consumption and disposal than countries with relatively low levels of environmental stress.

64. Without appropriate incentives to enhance the efficiency of resource use, there is scant hope of achieving sustainable environmental conditions. A crucial criterion for judging the economic efficiency of sustainable natural resource use is the equation of real marginal costs of supply and real marginal costs of environmental protection at sustainable levels. Provided that in all countries production and end-use prices incorporate the full cost of resource use (the Polluter-Pays and User-Pays Principles), trade liberalization will induce shifts in production, leading to a more efficient and sustainable use of environmental resources throughout the world. Conversely, the extent to which existing trade barriers prevent an appropriate pricing and allocation of the real user costs of environmental resources, they are detrimental to the objectives of sustainable development. Hence, it may be argued that trade policy should follow a two-way path. One path is the removal of distortive trade barriers that obstruct fair trade and efficient resource use. The other path should make way for the use of non-distortive environmental and trade instruments that put a premium on sustainable resource use subject to the trade principle of equal treatment of domestic and foreign suppliers.

65. Though increased co-ordination of environmental measures will help to reduce potential trade conflicts over environmental measures, it is unlikely to result in a move towards uniform emission and product standards, nor is this option necessarily environmentally desirable or economically efficient. In international trade it is necessary to allow for an appropriate differentiation of environmental standards. Other complementary options are to incorporate environmental principles and operational instruments into commodity agreements and preferential trade arrangements, on the one hand (in this connection, the International Tropical Timber Agreement, 1983, as well as the International Agreement on Jute and Jute Products of 1982 and its successor of 1989, incorporated provisions of this kind) and on the other hand, to ensure that global environmental agreements containing trade measures are consistent with fair and efficient trade.

66. To achieve this, international consensus is necessary with regard to the form which international harmonization of environmental policy instruments should take in combination with a consistent application of the Polluter- and User-Pays Principles. In order to be effective, however, international environmental arrangements will have to be backed up by adequate instruments that deal with "free-rider" problems. In practice, this is sometimes achieved by resorting to trade measures. This has been demonstrated, for instance, by the Montreal Protocol on Substances that Deplete the Ozone Layer.

67. The problem of the kind or degree of discrimination in the application of trade measures to non-participants, in order to deal with free riders, remains to be worked out, however. Legal experts have not yet agreed on whether this kind of discrimination is in conformity with GATT arrangements. Furthermore, some argue that international environmental agreements should prevail over GATT rules if this could bar the way of free riders, provided that such agreements were ratified by a large number of countries. While it is certainly the case that individual countries have the right not to join in international agreements, that right has to be reconciled with the concept of shared responsibility for the global environment. It is generally agreed that trade measures of this kind should be proportional to the objectives to be achieved. Trade restrictive effects should not be out of proportion to the legitimate environmental objectives that regulations are intended to meet. However, the operational meaning to be given to proportionality still remains to be worked out.

68. Distorted resource-exploitation patterns have established themselves in developing countries over the last 30 years as a result of agricultural protectionism, trade restrictions and other market imperfections in the developed world. Even if these obstacles were removed, it would take time for developing countries to adjust to the changes and adopt the more sustainable resource management practices which this would allow. The adjustment of existing production and trade patterns and the introduction of sustainable resource management practices not only takes time, it also has

to be financed. Poverty and financial constraints can only be overcome by economic growth in places where essential needs are not being met.¹² Insofar as poverty is an immediate cause of environmental degradation, growth focused on these places could relieve environmental pressures.

69. Even those who maintain that economic growth in any circumstances increases environmental pressures can hardly argue against more open markets in the developed world, because the aggregate effect of prolongation of existing trade protection would be even worse. The challenge is in any event to offset as much as possible negative impacts of economic growth by more effective and efficient resource management and conservation practices. This requires that trade liberalization be accompanied by appropriate technical and financial assistance as well as the use of environmentally related non-distortive trade instruments that would facilitate the integration of environmental concerns into production and trade patterns.

70. Commodity agreements can provide an operational framework for addressing many of the issues sketched above. Commodity agreements, especially in the framework of the Integrated Programme for Commodities, can also provide an important framework for channelling financial and technical assistance to enhance sustainable resource management in developing countries.

71. The Generalized System of Preferences (GSP) originated in 1968 at UNCTAD II. It represents a derogation of the Most Favoured Nation Principle of GATT in allowing more favourable treatment for developing countries. The objective of the GSP is to increase export earnings, to promote industrialization and to accelerate the growth of developing countries. Other preferential arrangements are operated by developed countries at the national level or in the context of groups of countries. This actually means the existence of a number of separate preferential arrangements. They grant preferences to developing countries in the form of tariff reductions, separate from or in combination with quantitative restrictions. Many arrangements also provide for technical assistance.

72. GSP has been applied on a non-reciprocal basis; emphasis needs to be put on the fact that GSP was established as a "generalized", non-reciprocal and non-discriminatory scheme of preferences beneficial to the developing countries" without any condition. Environmental protection should not be used as a conditionality by donor countries in their GSP schemes.

73. There is a need to analyse trade measures taken in the framework of international environmental agreements to see how GATT rules should be clarified or adapted to make them and the environmental agreements compatible without harming - or even better - while enhancing the development prospects of developing countries. Analyses of this kind should not ignore possible alternatives to trade measures for achieving the same purposes. Effective monitoring of environment-related trade measures constitutes one aspect of this. This specific question is taken up in Chapter II.

Conclusion

74. It should be emphasized that the foregoing has striven to present options in which trade and environmental objectives are mutually supportive. They all have their pros and cons which should be assessed in more detail, particularly with regard to their implications for developing countries. The effects of trade liberalization on the environment needs more analysis. This is particularly so with regard to the effects on sustainable development in developing countries brought about by removing existing trade distortions in developed countries (especially in agriculture). It is also important to analyse the impact of environmental regulations on trade, including trade-related policy measures in the framework of international environmental agreements, as well as the relation of such environmental measures and GATT principles in the perspective of the development aspirations of developing countries. In this analysis, the question of environmental standards and their differentiation according to local and national conditions, particularly in developing countries, calls for particular attention.

¹² World Commission on Environment and Development, *Our Common Future*, op. cit. p.44.

75. The following principles could guide trade measures taken on environmental grounds. Firstly, the basic GATT principles on non-discrimination are relevant for environmental purposes. They stipulate that measures "must not result in arbitrary or unjustifiable discrimination between countries where the same conditions prevail" and that they should not be a disguised restriction to international trade. Environmental regulations should not act as non-tariff barriers. Secondly, the proportionality principle should apply where trade instruments are deemed necessary for environmental purposes. This principle invites countries, in adopting trade measures for environmental reasons, to assess whether their trade restrictive effects are proportional to the legitimate objectives of the proposed measure. Thirdly, the precautionary principle should be applied when setting standards and establishing corresponding trade measures. However, in order to avoid an overestimate of dangers, scientific evidence should be fostered; enterprises can contribute to this requirement, given their scientific and technical knowledge.

76. There is a need for more information and transparency regarding trade measures related to the environment. The GATT Agreement on Technical Barriers to Trade requires parties to use international standards, when they exist, as a basis for their technical regulations. Environmental concerns can be expected to generate a growing number of such regulations: the establishment of international standards for environmental protection is thus a matter of some urgency and could help avoid misuse of these regulations. In the absence of such standards, contracting parties should follow the requirement of the Agreement on Technical Barriers to Trade to give notification of technical regulations in draft form to other parties for comment. In addition, environment-related trade measures need to be effectively monitored. The UNCTAD Trade Control Measures Informations System can contribute to this objective. Chapter II below is devoted to a discussion of this system.

77. However, it should be stressed that creating an appropriate interface between trade measures and environmental measures will not, by itself, achieve sustainable development on a global scale. That requires a broader approach to the problems faced by developing countries. Part and parcel of such a comprehensive approach should be a considerable increase in development assistance taken in a broad sense to include access to technology and support for environmentally benign practices already followed in developing countries, as well as the establishment of fairer trade relations between North and South. In short, sustainable development, which is in the interest of developed as of developing countries, will best be achieved in a supportive international economic environment.

Chapter II

UNCTAD's Trade Control Measures Information System

Introduction

78. With the growing awareness of environmental problems and the proliferation of environmental regulations, there is increased interest in analysing the interlinkages between trade and environment. Environmental policies can affect trade through the impact of environmental standards on production costs. They can also have an impact on trade practices and lead to trade frictions. Conversely, increased awareness of environmental problems could create opportunities for trade in environmentally sound products and production processes.

79. Trade policy analysts are increasingly concerned that environmental standards, laws and regulations may become barriers to trade. It is sometimes argued that environmental protection is used as a pretext for imposing trade barriers that are in reality protection of domestic industry from import competition. Some countries are seen as imposing environmental standards, laws and regulations that are felt to be "excessive" and which might have the effect of trade barriers. While studies to date have not found evidence of environmental policies causing significant international trade distortions, the potential for trade distortion is growing, particularly for developing countries. It is, therefore, extremely important to analyse and monitor how environmental rules and regulations could affect trade, and to examine ways of preventing environmental measures from becoming trade barriers. Adjustment of UNCTAD's Trade Control Measures Information System

with a view to adequately covering environmental measures potentially bearing on international trade will be an invaluable tool for analysis of the information sought.

A. The Trade Control Measures Information System¹³

80. For a number of years, the UNCTAD secretariat has been collecting information on trade measures which, either in practice or potentially, affect international trade flows. Both the coverage and quality of this information have been gradually improved, and information on more than 100 countries has now been computerized. The UNCTAD data base on trade control measures constitutes the most comprehensive computerized information system on such measures applied in developed and developing countries. The information is updated continuously, according to resource availabilities, and can be linked with computerized information on trade flows.

81. The information is collected by the secretariat from published official sources, as far as possible in cooperation with the authorities in member States. Official journals and circulars are continuously reviewed in order to identify changes in trade practices and restrictions. In addition, GATT documents are an important source of information. The Secretary-General of UNCTAD also requests member States to submit details of recent changes in tariffs and non-tariff measures.

B. Organization of the data base

82. The information on Trade Control Measures (TCMs) is stored in country files at the national tariff line level. It consists of the description of the TCM; the source used; the trading partners affected (indicating a country-specific application of a measure, if any); the date of initiation and eventual termination; and comments provided by UNCTAD member States on their own trade measures. The information is entered into the computer in numeric codes. The descriptions of products, measures and sources are kept in separate files which may be drawn upon for presentation in various combinations. It may become necessary to enlarge the descriptive and bibliographic parts of the data base when encoding environmental measures and regulations.

C. Use of the data base

83. The data base has been used for many purposes, such as the analysis of development in national trade policies and world trading conditions, assistance to Governments in analysing conditions of access to external markets for export development, the preparation of reference materials which help Governments in preparing their participation in multilateral trade negotiations; and research on non-tariff barriers.

D. Trade measures included in the data base

84. The data base currently includes mainly trade measures which are applied at the border. Other policies and practices such as government procurement policies, government industrial and regional development policies, foreign investment policies and macro-economic policies which also affect international trade flows are not covered by the information in the data base. Likewise ex-

¹³ See: UNCTAD DDM/Misc. 18/Rev. 1

port subsidies and other export measures are not included in the data base.¹⁴ The data base does not indicate the *de facto* operation or the degree of restrictiveness of a given measure at any particular point in time.

E. Dissemination

85. At its thirty-fourth session, held in May 1988, the Trade and Development Board decided that the UNCTAD secretariat provide, on request, information on trade control measures contained in its computerized data base (decision 354 (XXXIV)). The Intergovernmental Group of Experts on Definitions and Methodology Employed in the UNCTAD Data Base on Trade Measures, which met subsequently, reached agreement on recommendations for implementing this decision of the Trade and Development Board.¹⁵ Following the decision on dissemination, the secretariat has invited the member States to designate focal points for this purpose.¹⁶

F. Recent developments

86. Through decision 384 (XXXVII), of 12 October 1990, the Trade and Development Board requested the secretariat

...in connection with the efforts to promote dialogue within UNCTAD on the interlinkages between environmental and trade policies, to adjust the UNCTAD Trade Control Measures Information System to monitor environmental regulations for possible protectionism and to monitor non-tariff measures which have a bearing on the environment¹⁷

87. This decision of the Board was endorsed by the General Assembly in its resolution 45/210 on 21 December 1990. Following this decision and resolution, the UNCTAD secretariat suggested that it would be very useful if member States could provide the secretariat with environmental regulations and, wherever applicable, the corresponding product coverage (TD/B/1282). During the second part of the Thirty-seventh session of the Trade and Development Board, many delegations had responded positively to this suggestion thus showing considerable interest in assisting the secretariat in adjusting the data base. Visits to a number of capitals were planned with a view to discussing problems of definitions and methodology and for collecting relevant information. The experience gained during these discussions was expected to assist the secretariat in designing the framework for systematically collecting the appropriate information.

G. Trade measures having a bearing on the environment

88. The UNCTAD secretariat has compiled information on government regulations and practices that may distort international trade. In the analysis of official trade intervention, priority has been given to measures which introduce differential treatment between imports and domestically produced goods. Standards and regulations have not been included in such analyses.¹⁷ Therefore,

¹⁴ Except for voluntary export restraint arrangements which constitute quotas on exports to specific foreign markets which are administered by exporting countries, but which are imposed on them by importing countries.

¹⁵ The report of this Group of Experts is contained in document TD/B/1176.

¹⁶ In his note verbale of 5 June 1989, the Secretary General of UNCTAD explained how general access to the information contained in the data base may be requested, and invited each member State to designate a focal point for this purpose.

¹⁷ Although the secretariat makes no *a priori* judgement as to the intention of NTMs, their restrictiveness and their conformity or otherwise with international trade rules, certain prohibitions and licensing requirements affecting specific products categories such as dangerous and hazardous substances have normally been excluded from such analysis. In document TD/B/1267, paragraph 46, the secretariat states that "they (environmental measures) may be justified in

in the context of the annual review of the problem of protectionism, there has been no need to collect information systematically on such measures for all member States. However, some of the country files in the data base already contain information on such measures.¹⁸

89. The codification of non-tariff measures (NTMs) has been revised recently *inter alia* with a view to identifying more accurately those measures which are defended on environmental and other non-commercial grounds. For instance, NTMs such as prohibitions or licensing requirements which are applied with the stated purpose of protecting public health, wildlife or the environment, are being entered under specific codes. These codes are also being used when the stated purpose of the regulations is not known, but it can clearly be presumed to constitute measures taken with a view to protecting the environment, given the character of the product in question, the domestic legislation concerning the measure or the Ministry responsible for its enforcement. This approach enables the secretariat to reclassify part of the NTMs already included in the data base under a specific group of environmental measures. In the light of the increased interest in analysing trade aspects of environmental measures, it may be necessary to further refine this classification.

90. The following sections provide some background information on how the secretariat is incorporating environmental measures and regulations which may have a bearing on trade and trade measures implemented for environmental reasons. As mentioned before, the secretariat is approaching Member States for advice and information. Contacts are being established with international organizations. The secretariat is also seeking the advice of independent experts.

H. Tariff Measures (TMs)

91. Little or no use has been made of tariffs measures for environmental purposes. A one per cent tariff on tropical timber has been discussed but has never been agreed upon. On the basis of environmental considerations, Austria withdrew some tropical timber items from a tariff offer, concerning further reductions of GSP rates of duty it had tabled in the context of the Uruguay Round negotiations on tropical products.

I. Non-Tariff Measures (NTMs)

(1) Product standards

92. Concern has been expressed that environmental regulations might also act as trade barriers, for instance through the use of relatively minor differences in environmental characteristics between imported and domestically produced products as a means of favouring domestic products. Enforcement of stringent environmental regulations or standards can restrict market access. Standards should neither be discriminatory nor a disguised barrier to trade. The GATT Agreement on Technical Barriers to Trade (TBT) recognizes that while it is desirable to set technical regulations on the basis of international standards, in practice this may not always be possible. The TBT Agreement, therefore, requires countries, when they adopt mandatory regulations which are not based on international standards, to circulate them in draft form through the GATT secretariat so that other countries can comment on them. The obligation to take into account comments reduces the possibility of the new regulations posing barriers to trade. Such notifications may be an important source of information.¹⁹

some cases, but in others they may be the pretext for protectionist measures". While encoding information in the data base it may not be possible "to distinguish between pretexts and valid cases". However, the ongoing task of the secretariat would be to provide Governments with information to help them assess the justification of such measures.

¹⁸ In its current status, the data base includes mainly trade measures which are applied on imports at the border. Public regulations which may affect imported goods after customs clearance, have, in principle, not been included in the data base. A number of environmental policies, such as fiscal policies, are not considered in the data base as currently constructed (see section on methodological problems).

¹⁹ There have been about 2000 notifications (See: GATT Trade Policy Review, Canada, 1990 (page 240, par. 205)).

93. The number of product standards (health and safety regulations, packaging and labelling requirements, etc.) in each importing country is very high. Apart from Government enforced standards applied in the whole territory, there are also voluntary standards and provincial standards. Currently some country files in the TCM data base contain information on certain standards and regulations, but there is no systematic coverage. In order to improve the coverage of product standards, the secretariat may have to give priority to standards on selected product categories (e.g. those for automobile emissions, chemicals and pesticides)

(2) Internal taxes

94. Information on internal taxes being levied, as (part of) environmental policy measures, on specific products will have to be included in the data base, even when taxes which are applied equally to domestic products and imports may not constitute a non-tariff barrier to trade. Examples are emission charges (taxes on the discharge of pollutants) and product charges (on products containing pollutants, for example, fuels, pesticides and detergents).

J. Unilateral import restrictions, such as prohibitions and charges

(1) GATT Article XX (General Exceptions)

95. GATT Article XX (Exceptions) is relevant for environmental purposes. It recognizes that countries have the right to establish measures "(b) necessary to protect human, animal or plant life or health" and "(g) relating to the conservation of exhaustible national resources, if such measures are made effective in conjunction with restrictions on domestic production or consumption". Conditions are that measures must not result in "arbitrary or unjustifiable discrimination between countries where the same conditions prevail" and not be a disguised restriction on international trade.

96. The use of coercive or retaliatory trade measures with a view to applying pressure on other countries to upgrade their environmental standards is generally not considered acceptable under current international trade rules. A number of trade measures for which Article XX justification has been given have been challenged by trading partners under GATT's dispute settlement mechanism. Import bans have been imposed on salmon, tuna and other fish caught with driftnets.²⁰ In principle, all measures for which Article XX (b) or (g) justification has been given should be included in the TCM data base. A limitation, however, is that there is no notification obligation for Article XX measures.

(2) Other import bans and charges

97. Information on other restrictions implemented unilaterally by individual countries is collected from national sources.

K. International environmental agreements

98. A series of transfrontier and global environmental problems are being tackled through international conventions. A number of international environmental agreements use trade measures to achieve their objectives. Signatories apply NTMs to comply with the provisions of the such agreements. International agreements exist, *inter alia* to control trade in endangered species. One

²⁰ Import restrictions in the United States on tuna fish originating in Mexico (based on dolphin kills) have been subject to consultations under GATT's dispute settlement mechanism).

of the best known agreements is the the Washington Convention on International Trade in Species of Wild Flora and Fauna Threatened by Extinction (CITES).²¹

99. The United States International Trade Commission (USITC) recently undertook a study to identify environmental and wildlife agreements that are made effective through trade restrictions.²² The Commission found that relatively few agreements relied on trade measures for enforcement. Of 170 agreements designed to protect natural resources, wildlife, and cultural or historical property, only 19 agreements employed trade restrictions (see annex).²³

100. Other international agreements exist which use trade instruments only, or which apply in a discriminatory way with regard to non-participants (to deal with the problem of free riders). For instance, the Montreal Protocol on Substances that Deplete the Ozone Layer contains trade measures bearing on both imports and exports by non participants.²⁴ Other examples are the International Whaling Convention (normally special authorizations are required for imports of whales and their preparations from non-member countries).

L. Some methodological problems

(1) Product coverage

101. An important problem is finding the exact product coverage of environmental measures. Currently the highest level of detail used in the data base is the national tariff line. As the data base information has normally been used in combination with trade flows, there has been no need to use a higher level of disaggregation than that used in the corresponding trade statistics. Trade measures affecting only certain portions of national tariff lines have been classified as "ex-items". It may be difficult, or even impossible, to know what part of the trade values reported in computerized trade statistics is covered by the measure in question. So far this problem has been manageable. In the case of environmental measures, "ex-items" may tend to be the rule rather than the exception, however. The consequences are, *inter alia*, that (a) the analysis of trade coverage of environmental measures is extremely difficult and (b) the usual description of the tariff items gives a poor indication of the product coverage of the measure in question, thus requiring the entry of additional information. The future revisions of the Harmonized System nomenclature should possibly take this problem into consideration.²⁵

(2) Export measures

²¹ Trade in products listed in Annex I are banned while some trade (with permits) is allowed for products listed in Annex II. An example is the ban on ivory trade, agreed under CITES in October 1989 and formally in effect since 1 January 1990 (the African elephant was transferred from an Appendix II listing to Appendix I, banning all trade in elephant products). Trade measures have also been used with regard to domestically prohibited hazardous substances.

²² U.S. International Trade Commission, "International Agreements to Protect the Environment and Wildlife", USITC Publication 2351, January 1991.

²³ Not counted are some of the 170 agreements which also use trade instruments, but only with regard to non-participants ("free riders").

²⁴ Member countries are expected to reduce production, consumption and imports from member States gradually by stages, over a period of years, while the ban on imports from non-members is to be applied in full at an earlier date. Legal experts have expressed different views on the whether such measures are in conformity with GATT.

²⁵ In this context, it is worth noting that the Harmonized System Committee of the Customs Co-operation Council recently "finalized a request by the United Nations Environment Programme to introduce specific subheadings in the Harmonized System in order to facilitate the collection and comparison of data on the international movement of substances controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer. Considering the urgent need to monitor international trade in these substances and the fact that amendments to the Harmonized System Convention could not be implemented internationally for several years, the Council approved a draft Recommendation asking Member Administrations to take all appropriate actions to insert the additional subheadings in their statistical nomenclatures, as soon as possible". See: Customs Co-operation Council, Annual Report, Bulletin No. 35.

102. The data base, as currently constituted, does not include export measures.²⁶ However, a considerable number of trade measures for environmental purposes consists of export measures. Examples are bans on exports of domestically prohibited dangerous and hazardous substances or bans on exports of logs in the Pacific north-west of the United States. In an initial stage, the UNCTAD secretariat will continue to give priority to import measures. An important part of environmental trade measures will therefore not be covered for some time. At a later stage efforts should be made to incorporate these measures into the data base.

Conclusions

103. The interlinkage between international trade and the environment is a relatively new issue. There is little empirical evidence showing that environmental measures have had an impact on trade. Hence questions concerning what kind of measures to include in the data base and at which level of detail are far from unambiguous. The question of data base use, which ultimately indicates the measures to be included (e.g. to analyse to what extent measures affect international trade or what role environmental considerations should play in trade policies), also needs to be studied.

104. In the process of adjusting the data base to include environmental measures, the secretariat is simultaneously dealing with several issues: (a) collection of information; (b) consideration of the question of definitions and methodology; (c) consideration of tools that need to be developed to analyse the extent to which measures may affect international trade; and (d) required adjustments in the data base coding system itself. It is expected that there will be cross-fertilization in the four areas of action.

A. Collection of information

105. An important activity is the collection of information. Visits to a number of capitals were planned with a view to discussing problems of definitions and methodology and, at the same time, collecting relevant information. The experience gained during these discussions was expected to assist the UNCTAD secretariat in preparing a framework to be used to collect further information from member States.

B. Definitions

106. Environmental regulations are qualitatively different from most border trade measures, such as licensing and quotas, which traditionally have constituted the core of the Trade Control Measures Information System data base. Although it is not necessary to have full agreement on the measures to be covered in the data base, there is a need to evolve a minimum level consensus on the kind of measures to be included in the data base, the detail of information to be encoded and the priorities to be established (e.g. for the encoding of information on environmental regulations, particularly with regard to standards and labelling requirements). The UNCTAD secretariat may have to give priority to selected product categories. For this purpose, independent expert advice will also be sought.

²⁶ Except for voluntary export restraint arrangements which constitute quotas on exports to specific foreign markets which are administered by exporting countries, but which are imposed on them by importing countries.

C. Analytical instruments

107. In the past, an important analytical use of the data base has been that of measuring the extent and trends in the application of border trade measures. Such analysis has been undertaken principally on the basis of quantitative indicators (trade coverage and frequency indices). There is no doubt that the analysis of the extent to which environmental measures affect international trade would require the development of a new analytical framework.

D. The data base coding system

108. Although the existing data base coding system can be used to encode information on trade measures applied on environmental grounds, for the systematic and meaningful coverage of environmental measures having a potential bearing on trade, it may become necessary to enlarge the descriptive and bibliographic parts of the data base. The exact extent of adjustments required will become evident only as work progresses.

E. Requirements for substantive and financial inputs

109. For the establishment of the data base, the secretariat had benefitted in the past from contacts with member States, informal expert meetings, consultants' reports and considerable financial support from UNDP. It appears that for the successful implementation of the activities mentioned in this paper, it will be beneficial to draw on similar inputs. The secretariat is planning to request experts to prepare reports and to convene a number of informal meetings to support this work. It is hoped that such activities will benefit from the substantive and financial support of UNCTAD's member States.

Annex

INTERNATIONAL ENVIRONMENTAL AGREEMENTS THAT EMPLOY TRADE RESTRICTIONS²⁷

Agreements concerning wildlife other than fish and whales:

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere
African Convention on the Conservation of Nature and Natural Resources
Convention between United States and Great Britain (for Dominion of Canada) for the protection of Migratory Birds in the United States and Canada
Convention between the United States of America and the United Mexican States for the Protection of Migratory Birds and Game Mammals
Convention between the United States and Japan for the Protection of Migratory Birds and Birds in Danger of Extinction, and their Environment
Convention between the United States of America and the U.S.S.R. concerning the Conservation of Migratory Birds and their Environment
International Convention for the Protection of Birds
Agreement on the Conservation of Polar Bears
Arrangement between the United States of America and Canada on Raccoon Dog Importation
International Plant Protection Agreement
North American Plant Protection Agreement
Plant Protection Agreement for the South East Asia and Pacific Region
Convention for the Establishment of the European and Mediterranean Plant Protection Organization
Phyto-Sanitary Convention for Africa

Agreements concerning archaeological, cultural, historical, or natural heritage:

Treaty of Cooperation Between the United States and the United Mexican States Providing for the Recovery and Return of Stolen Archaeological, Historical and Cultural Properties
Agreement Between the United States and the Republic of Peru for the Recovery and Return of Stolen Archaeological, Historical and Cultural Properties
Agreement Between the United States and Guatemala for the Recovery and Return of Stolen Archaeological, Historical and Cultural Properties
Convention on the means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property

Source: United States International Trade Commission, "International Agreements to Protect the Environment and Wildlife", USITC Publication 2351, January 1991.

²⁷ Excludes certain agreements which also use trade instruments, but only with regard to non-participants.